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■ SECTION 2 - This section is generally concerned with the use of linear models for expressing the retrieval transformation and focus on the use of a linear network model as a framework for analyzing and interpreting the associative retrieval process. Its contents include papers grouped under the following headings: Mathematical Properties of the Electrical Network (ACORN) Model, Algebraic Properties of the Linear Associative Transformation Matrices, Adaptive Methods of Modifying or Eliciting Linear Retrieval Transformations, and Departures and Extensions.

■ SECTION 3 - If concept-bearing strings of words could be identified within queries and messages by automatic means, this could lead to an improved form of automatic indexing which would, in turn, result in improving the performance of the message retrieval process. The first part of this section is devoted to developing the concrete basis for talking about concept-bearing language structures and presenting qualitative arguments relating these structures to the message retrieval operation. The second develops the theoretical models necessary for discovering content-bearing strings, the third evaluates the methodology, and the appendices treat various matters having to do with string processing.

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This comprehensive volume brings together reports on many phases of indexing and cataloging for optimum information retrieval. Subjects covered in this volume include:

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- SECTION 2 - Techniques for Machine-Assisted Cataloging of Books. This report summarizes techniques for the automatic production of catalog card sets from machine - interpretable records.

- SECTION 3 - Automatic Indexing and Abstracting. This report consists of eight papers concerned with the relationship between the part of speech of words and their graphic form; a progress report on the development of a method for automatic indexing; and the relationship between English phonetics and English morphology.

- SECTION 4 - The Catalog Input/Output System. A complete definition of the format used for catalogs on magnetic tape and a description of the routines of the Catalog Input/Output System.

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- SECTION 7 - A Comparison of Some Machine-Produced Indexes. Some machine-produced indexes are compared to assist in deciding on the format for a proposed index. The objectives of an index and the search procedure are analyzed.

- SECTION 8 - Studies of Indexing Depth and Retrieval Effectiveness. This project consists of a group of studies addressed to the following kinds of questions: it is better to assign few or many index terms to a document, or is there an optional

intermediate number. How specific or low general should they be. Should the indexing vocabulary be free or controlled. How do all of these issues affect "recall" and "precision." In the second part of this section, an attempt is made to evaluate the studies of indexer consistency that have been reported, to analyze their results and to integrate their findings.

- SECTION 9 - Standard for Description Cataloging of Government Scientific and Technical Reports. The purpose of this report is: (1) To provide rules for descriptive cataloging appropriate to the needs of information centers. (2) To provide users with a consistent form of citation and index entries among the products of various information systems. (3) To provide a guide to organizations and institutions who wish to formulate compatible descriptive cataloging practices.

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- SECTION 12 - A Classed Thesaurus as an Aid to Indexing, Classifying, and Searching. This report surveys and discusses the studies made in connection with the development of a classed thesaurus or conceptual dictionary in meteorology. The project comprises not only the production of the classed thesaurus, but includes an investigation in classificatory problems, the bases and roots of systematic arrangements that would facilitate the retrieval of facts, data, topics, notions, ideas, findings, theories, etc. and their associations and relations.

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